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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,074	10/02/2001	William D. Jensen	V44.12-0149	9047

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MINNEAPOLIS, MN 55415-1002

EXAMINER
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CHAMBLISS, ALONZO

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/970,074

Applicant(s)

JENSEN ET AL.

Examiner

Alonzo Chambliss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### **DETAILED ACTION**

1. The amendment filed on 11/30/05 has been fully considered and made of record in the application.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-14 and 22 have been considered but are moot in view of the new ground(s) of rejection.

In regards to Song teaching selectively applying a signal from the first pad to the fuse circuit through the first conductor. the phrase " trimmed by selectively applying a signal from the first pad to the fuse circuit through the first conductor " and " selectively applying a fuse blowing signal to the device trimming fuse circuits " makes the claim a " product by process " claim. In a " product by process " claim, the claim is directed to the product per se, no matter how actually made, *In re Brown*, 190 USPQ 15 at 17 (footnote 3) and *In re Thorpe et al.*, 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a " product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in " product by process " claims or not. Therefore, one skilled in the art at the time of the invention would readily recognize selectively applying a signal from the first pad to the fuse of Song, since selectively applying a signal to pad would prevent trimming unwanted integrated circuits on wafer and allowing the unwanted integrated circuits to function in a different capacity in the semiconductor package.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3, 5-9, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 6,121,677).

With respect to Claims 1, 7, and 12, Song discloses a plurality of integrated circuit dice 400 separated from one another by scribe lanes, the dice 400 having device trimming fuse circuits 24 adjacent the scribe lanes 100. A plurality of pads 20 positioned in the scribe lane 100 and connected to the device trimming fuse circuits 24 by conductors 22, so that following singularization of the dice from the wafer, the pads 20 are disconnected from the device trimming fuse circuits 24. The conductors 22 are severable during singularization (i.e. trimmed) of the integrated circuits since they

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extend across the scribe lane 100 and the fuses which are inherently blown when the proper amount of current (i.e. signal) is applied from the pads (see col. 2 lines 1-46, col. 3 lines 1-67, and col. 4 lines 1-67; Figs. 3 and 4). Song does not explicitly disclose the integrated circuit is trimmed by selectively applying a signal from the first pad to the fuse circuit through the first conductor or for selectively applying a fuse blowing signal to the device trimming fuse circuits. However, the phrase "trimmed by selectively applying a signal from the first pad to the fuse circuit through the first conductor" and "selectively applying a fuse blowing signal to the device trimming fuse circuits" makes the claim a "product by process" claim. In a "product by process" claim, the claim is directed to the product per se, no matter how actually made, *In re Brown*, 190 USPQ 15 at 17 (footnote 3) and *In re Thorpe et al.*, 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Therefore, one skilled in the art at the time of the invention would readily recognize selectively applying a signal from the first pad to the fuse of Song, since selectively applying a signal to pad would prevent trimming unwanted integrated circuits on wafer and allowing the unwanted integrated circuits to function in a different capacity in the semiconductor package.

With respect to Claim 2, Song discloses a second pad positioned in the scribe lane 100 and a second conductor 22 extending from the fuse circuit to the second pad (see Fig. 4).

With respect to Claims 3, 5, 8, Song discloses wherein the first and second pads are a fuse pad and supply pad (i.e. any one test pads can function as a fuse and supply) connected to each fuse circuit, respectively and are aligned generally parallel to an edge of the integrated circuit die (see col. 3 lines 60-67, col. 4 lines 45-55, and col. 5 lines 35-47; Fig. 4).

With respect to Claim 6, Song discloses wherein the conductor is oriented generally perpendicular to the edge (see Fig. 4).

With respect to Claim 9, Song discloses wherein each fuse circuit includes a fuse connected to the fuse pad and the power supply pad by the conductors, which cross the die edges (see Fig. 4).

With respect to Claims 11 and 13, Song discloses wherein the fuse circuits are aligned in rows generally parallel to the scribe lanes (see Fig. 4).

5. Claims 4, 10, and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 6,121,677) as applied to claims 7-9 above, and further in view of Lee (U.S. 4,935,645).

With respect to Claims 4, 10, and 22, Song discloses the claimed invention except for explicitly disclosing a fuse circuit including a fuse and circuitry for sensing whether the fuse is blown. However, Lee discloses a fuse circuit including a fuse and circuitry for sensing whether the fuse is blown as evident by Lee (see col. 2 lines 55-65). Thus, Song and Lee have substantially the same environment of a fuse on an integrated circuit. Therefore, it would have been obvious to one skilled in the art to incorporate a fuse and circuitry for sensing whether the fuse of Song is blown, since the

fuse and circuitry would detect when a fuse is blown to prevent voltage damage to integrated circuit as taught by Lee.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 6,121,677) as applied to claim 12 above, and further in view of Fenner et al. (U.S. 6,627,917).

With respect to Claim 14, Song fails to disclose a pair of adjacent fuses shares one common pad, wherein the conductors provide redundant interconnection between each die and the pads. This would provide redundancy between fuses and one common pad. However, Fenner discloses a pair of adjacent fuses share one common pad since as stated in col. 4 lines 50-55, the conductors 204 provide redundant interconnection between each die 200 and the pads 106. This would provide redundancy between fuses and one common pad. Thus, Song and Fenner have substantially the same environment of a testing of dies between scribe lines. Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate a pair of adjacent fuses sharing a one common pad with the product of Song, since the sharing of a common pad would reduce the resistance between the pads and each die while maintaining electrical interconnection in the event a conductor in one of more scribe areas is damaged or open as taught by Fenner.

The prior art made of record and not relied upon is cited primarily to show the product of the instant invention.

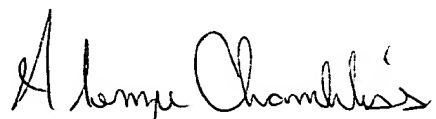
**Conclusion**

7. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (571) 272-1927.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system see <http://pair-dkect.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC\\_Support@uspto.gov](mailto:EBC_Support@uspto.gov).

AC/February 21, 2006



Alonzo Chambliss  
Primary Patent Examiner  
Art Unit 2814